



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

pores are multicellular of a dark brown color, their cell walls being more evident and the constrictions between the cells more distinct than in the example figured by Ellis * in plate X, figure 3, of his North American Pyrenomycetes. The prodigious formation of sporidia in the spermatogonia accounts for the phenomenal spread of the fungus during the early autumn days. The presence of the mycelium on the surface of the leaves does no apparent injury to the leaf substance. The fungus is a saprophyte and feeds superficially on the mixed honey dew and insect substance. When fully matured, the whole mass can be removed from the beech without the slightest injury to the upper leaf epidermis. However, the formation of starch in the leaf cells seems to be checked, *Scorias spongiosa* Schw., of a black color, acts as an almost perfect screen, shutting off the sun's rays, and thus influencing in a substantial manner the starch production of the beech host, so that, if it were not for supplies derived from other parts of the tree fully exposed to the sunlight considerable damage might be done to the shaded leaves. We have, therefore, in the saprophytic association here described another interesting example of the inter-dependence of organisms.

University of Pennsylvania.

* Ellis & Everhart, N. A. Pyrenomycetes, 55, pl. 10. 1892.

NOTES FROM MYCOLOGICAL LITERATURE. II.

W. A. KELLERMAN.

AN INTERESTING STUDY of *Cladochytrium alismatis*, found for the first time in America at Glacialis pond, Cambridge, Mass., is given by G. P. Clinton in the Botanical Gazette, 33:49-61. 3 pl. Jan. 1902.

ALTERNARIA CITRI Ellis & Pierce n. sp., the cause of Black Rot of Oranges, is described in the Botanical Gazette, 33:234-5, March 1902. The losses are from 3 to 10 per cent of the crop of navel oranges in the districts of California. The cells of the pulp sacks are destroyed, and soon become black in color and bitter to the taste.

THE OHIO AGRICULTURAL EXPERIMENT STATION has issued (Bulletin 128) a general index to its Reports and Bulletins, volumes 1 to 20, 1882 to 1901, a 43-page pamphlet. The references are not to the several Annual Reports and Nos. of the Bulletins but to the year and pages — a continuous pagination having been followed for the publications of each year after 1888. Under the head of "Diseases" of plants, of alfalfa, apple, asparagus,

barberry, barley, bean, beet (and all other commonly cultivated plants), the entries cover about 4 pages. After each the disease or the fungus in question is given, thus: Alfalfa, leaf spot fungus; Asparagus, rust; Tomato, fusarium, etc. There is also a complete index to technical [botanical] names. These Reports, though containing no account of extended research along mycological lines, nevertheless record numerous observations of the occurrence of parasitic fungi, experiments for checking their ravages, and voluminous compilations as to the character and life histories as well as their economic aspects. Amateurs, beginners and even specialists will therefore find the Ohio publications a useful encyclopedia of plant diseases.

TEXT BOOK ON BACTERIOLOGY. — THE LABORATORY GUIDE IN ELEMENTARY BACTERIOLOGY by William Dodge Frost (published by the author, Madison, Wisconsin) is a book in demand as shown by the appearance after one year of a second, but slightly changed edition. The secret of its success is doubtless centered in the fact that it is essentially the work that the author has been using in his classes. Part I, General Bacteriology, occupies 133 pages; Part II, Medical Bacteriology, covers pages 134-348. The actual use of this book will doubtless show its thorough practicability, satisfactory completeness and excellent character which are evident to the reviewer; it is therefore most highly commended to all interested in practical bacteriology.

APPLE SCAB is the title of an important Bulletin (No. 67, pp. 109-156, Illinois Agricultural Experiment Station, December 1901) by George P. Clinton. A general account is given of the fungus including its parasitic or temporary stage on leaves and fruit, *Fusicladium dendriticum*; and its saprophytic or permanent stage, *Venturia*, on the dead leaves. The connection of the former with the latter, — suggested by Goethe in 1887, figured by Brefeld in 1891, and fully studied (the scabs of Apple, Pear, and Cherry) in 1894 by Aderhold who connected them with species of *Venturias*, — was corroborated by Mr. Clinton; the latter's work however was successful, it should be said, while he was yet ignorant of the investigations by the other botanists named. He says, "From the results of these and the writer's investigations there is no doubt that apple scab is merely a parasitic summer stage of a permanent saprophytic fungus occurring on the fallen leaves. It also appears to be this latter form that is largely (in its immature condition) responsible for carrying the fungus through the winter. At least the writer has been unable to find any satisfactory evidence that the scab stage persists on the young twigs, as has been stated by some investigators, and by means of a new crop of scab spores in the spring spreads the disease to the young fruit and leaves. Neither was there found any evidence that the old spores lived over the winter on

the fallen leaves, or that the mycelium in these gave rise to a new crop for spring infection." Details need not be here transcribed relative to the Injury, Prevention, Time of appearance, Artificial cultures, and Microscopic structures. Under the head of Nomenclature it is pointed out that the earliest name given the scab stage (fructigenous form) was *SPILOCAEA POMI* Fries, Nov. Fl. Suec. 5:79. 1819. Eleven different names were subsequently used by various authors. "In 1833 Wallroth unquestionably found the leaf form and named it *Cladosporium dendriticum*." Cooke in 1866 (Seem. Jour. Bot.) described the apple-leaf *Venturia* as a new species, namely *Sphaerella inaequalis*. Mr. Clinton therefore follows Aderhold and sanctions the name *Venturia inaequalis* (Cke.) Winter. It seems to us on the contrary that the evidence is ample to justify the name *Venturia pomi* (Fries.). Half-tones and outline drawings, 18 pages, are used in illustrating this thorough and commendable Bulletin. Still another important portion should be mentioned, namely, the Bibliography; this covers 12 pages and includes about 170 items.

THREE NEW GENERA OF THE HIGHER FUNGI, by Professor Atkinson, are described, each with one species only, in the July No. of the Botanical Gazette (34:36-43, 1902). Three half-tones of outline drawings illustrate these three interesting forms. *EOMYCENELLA*, a new genus of Hymenomycetes, is based on specimens found on fallen leaves of *Rhododendron*, in September 1899. They are very small, 3-8 mm. high, pileus 0.5-0.75 mm. broad, stem slender and fleshy, very delicate, entirely white, the hymenium plane or in large forms with a few short, narrow, distant lamellae, not reaching the stipe. *EOTERFEZIA*, the type of a new genus and family of Elaphomycetes, is based on specimens that appeared as a parasite on *Sordaria* grown in the laboratory in 1897 on cow dung. There appeared on the perithecia of *Sordaria* white, knot-like protuberances, subglobose or kidney-shaped, nearly the entire interior of the body being occupied by minute asci scattered and intermingled with the mycelium. The *DICTYBOLE*, a new genus of Phalloids, is based upon specimens collected in sandy soil in Texas in 1901, having a dimorphic gleba, the upper part traversed by sterile, radiating, imbricate plates, the lower part latticed something after the fashion of *Simblum*. The upper part of the volva remains adherent to the pileus, rupturing in a circumscissile manner, often leaving the pileus more or less irregularly lobed and pendent around the upper part of the receptacle.

DR. J. C. ARTHUR SUMMARIZES Eriksson's paper on the Rusts of cereals, published in the first two issues of the *Annales des Sciences Naturelles* for 1902, in an admirable manner, in the July No. of the Botanical Gazette under Notes for Students.

Reference is made to the experiments from 1892 to 1899, growing wheat, oats and barley protected from atmospheric contagion — though rust appeared on the plants. The summary continues: "Seeds from rusted plants, it is asserted, are capable of giving rise to rusted plants, with no external source of infection; and the author believes that the rust fungus exists in the seed in a mycoplasmic form, and may so exist as long as the seed is viable. Seeds sometimes bear sori filled with teleutospores, but it is not from these spores that the infection is derived. While it is impossible to demonstrate the mycoplasm, the fungus for the time having lost definite form and become intimately associated with the protoplasm of the host, yet many observations and experiments are arrayed by the author in proof of its existence. Moreover, certain analogous states have been observed in other organisms. Among the most striking instances are *Rozella* and *Woronina*, belonging to the Chytridiaceae, and parasitic on *Saprolegnia*. According to the studies of Cornu and Fischer, when these plants penetrate the host they become diffused for a time in the protoplasm of the cell, and are then quite unrecognizable. Afterward they assume the usual form and produce spores. In accordance with this theory rust may be checked by treating the seed in a manner to kill the mycoplasm. A change of climate, conditions of growth, etc., may also cause the death of the mycoplasm, which will account for the fact that seed from rust-infested fields when taken to another locality or a distant country often gives plants free from that particular kind of rust."

APPLE ROTS IN ILLINOIS is the title of an instructive Bulletin (No. 69 Ill. Agr. Exp. Sta., Feb. 1902) by G. P. Clinton, in which is mentioned briefly the four diseases, Brown Rot (*Monilia fructigena* Pers.), Soft Rot (*Rhizopus nigricans* Ehr.), Fruit Blotch (*Phyllosticta* sp.), and Black Rot (*Sphaeropsis malorum* Berk.); but the main portion of the Bulletin is devoted to the Bitter Rot, whose summer stage [*Gloeosporium fructigenum* Berk.] and permanent or winter stage [*Gnomoniopsis fructigena* (Berk.) Clint. n. n.] were thoroughly investigated and are here fully described and illustrated. The author states that in practically all of the cultures that were made, including the Petri dish separation cultures, there developed in time an ascomycetous fungus that proved to be the permanent stage of the Bitter Rot. This generally appeared, more or less matured, within two weeks after the cultures were started and usually after the *Gloeosporium* spores had chiefly disappeared after germination. So far as is known this is the first time that the permanent stage has been found.

THE UREDINEAE OCCURRING upon *Phragmites*, *Spartina*, and *Arundinaria* in America, by Dr. J. C. Arthur is published in the July No. of the *Botanical Gazette* (34:1-20, 1902). The con-

fusion of the American species is here cleared up. Full descriptions and many illustrations are given of the seven species, of which two are new and two others receive new names. The article concludes with a serviceable key for determining unnamed material, based upon distinctions of host, position on the host, and the character of the uredospores, as follows:

ON SPARTINA.

- Sori arising from soft tissues (intercostal.)
 Uredospores with wall thin, colored, echinulate.....*U. acuminatus*.
 Uredospores with wall thick, pale, echinulate.....*P. distichlidis*.
 Uredospores with wall thickened above, colorless, tuberculate
 *P. seymouriana*.
 Sori arising from hard tissues (supercostal.)
 Uredospores with wall thickened above, colorless, tuberculate
 *P. fraxinata*.

ON PHRAGMITES.

- Sori amphigenous, uredosori without paraphyses,
 Uredospores with four equatorial pores.....*P. rubella*.
 Sori amphigenous, uredosori with paraphyses,
 Uredospores with indefinite, scattered pores.....*P. simillima*.

ON ARUNDINARIA.

- Sori hypophyllous, uredosori without paraphyses,
 Uredospores with rather thick wall, echinulate.....*P. arundinariae*.

THE CONTINUATION of Rud. Lüdi's Beiträge zur Kenntniss der Chytridiaceae in Hedwigia (Beiblatt), March, 1902, enumerates a large number of infection experiments with *Synchytrium taraxaci* and *Synchytrium anemones*. In the summary he states that *Synchytrium taraxaci* from *Taraxacum officinale* Wigg. could be transferred to *T. ceratophorum* DC., *T. palustre* DC., *T. erythrospermum* Andr. (and also the vars. *rubicundum* Dahlst., *lacistophyllum* Dahlst., *laetum* Dahlst. and *brachyglossum* Dahlst.), *T. corniculatum* DC. and *T. crepidiforme* DC.; also that *Synchytrium anemones* wurde von *Anemones nemorosa* übertragen auf *Anemone silvestris*.

THE GEASTRAE is the title of a useful pamphlet of 44 pages concisely written, profusely illustrated and generously distributed by C. G. Lloyd, the well known mycologist of Cincinnati. A general account of the group covers 4 pages, followed (pp. 8-38) by keys, descriptions and many half-tones of each species. An appendix of "References"—which are "to plants and not to authorities for names of plants"—occupies pp. 39-41; but the several paragraphs would perhaps be more convenient for consultation had they been placed immediately after the names in the text after the usual method.

THE PEAR BLIGHT in California has been noticed by Newton B. Pierce (Science, N. S. 16:193. 1 Aug. 1902) in 1899 as a normal epidemic form of Spring development and has now spread to a large percentage of the leading pear-growing districts of

Southern California and of the San Joaquin and Sacramento valleys. The Santa Clara valley and other coast regions are wholly or nearly free from its ravages. The leading characters distinguishing the Winter blight are given as follows: "First, it rarely if ever attacks a tree at points higher than a man's head, always affecting the trunk or base of the main limbs, hence the larger and more vital portions of the tree; second, the infection takes place about the time the crop is gathered or shortly after; third, it continues in a most active and destructive state during the months of November, December and January; and, fourth, it may prevail in an orchard showing little or no signs of the Spring form of the disease." The article states relative to the agency of bees: "The contrast between the number of infections in orchards near large colonies of bees and those more distant was very striking in both cases noted in the San Joaquin valley. The field conditions presented convincing evidence that near proximity of large colonies of bees to pear orchards greatly increases the danger to, and hastens the time of destruction of the latter."

THOSE WHO WOULD be students of the Uredinae will read with interest and profit the article by Dr. Arthur on Clues to Relationship among Heteroecious Rusts, published in the Botanical Gazette, 33:62-6, Jan. 1902. All observations affording clues, he says, must be made in the field. Stress is laid on the juxtaposition of the two kinds of spore formation, aecidial and teleutosporic. "It will be many years before any large proportion of our numerous heteroecious rusts will be connected with their respective aecidia, and in the mean time all clues to relationship will be much prized by students, and their pursuit will give to the collector an additional source of pleasure."

TOO MUCH IMPORTANCE has been ascribed to a cellulose-dissolving enzyme, says Ralph E. Smith, in the summary of his article in the Botanical Gazette (33:421-36, June, 1902), on the Parasitism of *Botrytis cinerea*. "Two stages in the process should be clearly distinguished: First, a poisoning and killing of the cells; and second, their disintegration and utilization as food by the cells. The first effect appears to be produced by a substance which there are strong reasons for supposing to be oxalic acid, formed by the fungus as a by-product of its metabolism. Following this, a number of different enzymes are secreted which digest the various constituents of the tissue."

THE GOOSEBERRY MILDEW, *Sphaerotheca mors-uvae* (Schw.), though claimed by E. S. Salmon to be confined to North America, has been reported as indigenous in Ireland by S. Salmon, and as indigenous in Russia by P. Hennings. Dr. P. Magnus in a recent number of the *Gartenflora* maintains that the latter are

cases of importation. He calls attention to the fact that *Sphaerotheca tomentosa* (Otth.) Jacz.—of which *Erysiphe gigantasca* Sorok., reported on *Euphorbia virgata* from Moscow, is a synonym—is somewhat different from *Sphaerotheca mors-uvæ* (Schw.) with which Salmon in his Monograph of the Erysiphaceae, unites it. Magnus is therefore of the opinion that the form on *Euphorbia* is really a different species, saying moreover “bei der verschiedenen geographischen Verbeitung beider Formen zweifle ich nicht, dass sie zwei verschiedenen Arten entsprechen.”

PROFESSOR P. HENNINGS has published in *Hedwigia*, March, 1902, under the title, “Fungi blumenavienses II, a cl. Alfr. Möller lecti,” an article of 33 pages, containing an enumeration of the Ascomycetes from Blumenau (South Brazil) obtained in 1891-3. Some of the species had been previously reported, but are also included in this article. They are all grouped in proper systematic order under Pyrenomycetes and Discomycetes, 8 families of the former and 12 of the latter. The new genera proposed are *Aschersoniopsis* (Hypocreaceae), *Moelleroclavus* (Xylariaceae), *Stilbohypoxyton* (Xylariaceae), *Midotiopsis* (Dermateaceae), *Bulgariopsis* (Bulgariaceae), and *Moellerodiscus* (Cudoniaceae). Seventy-two new species are described, the diagnoses in Latin.

OHIO FUNGI EXSICCATI.

The fifth fascicle of the Ohio Fungi is today issued. It completes a century—the fascicles averaging 20 specimens. The 100 specimens belong to the following genera: *Aecidium* (8 sp.), *Albugo* (1 sp.), *Cercospora* (2 sp.), *Cintractia* (2 sp.), *Exoascus* (1 sp.), *Gymnoconia* (1 sp.), *Gymnosporangium* (2 sp.), *Melampsora* (2 sp.), *Microsphaera* (1 sp.), *Peronospora* (1 sp.), *Piggotia* (1 sp.), *Phyllachora* (2 sp.), *Phyllosticta* (3 sp.), *Plasmopara* (1 sp.), *Polystictus* (1 sp.), *Puccinia* (25 sp.), *Rhytisma* (1 sp.), *Septoria* (6 sp.), *Urocystis* (2 sp.), *Uromyces* (8 sp.), *Ustilago* (4 sp.), *Venturia* (1 sp.). Although instituted for the purpose of exchange with botanists many requests for the purchase of the specimens suggested at once the enlargement of the edition; now all can be accommodated who may wish the fascicles as they are issued. The price fixed, intended to cover but part of the actual cost, is \$5.00 for each five fascicles (100 specimens). Four or five fascicles will probably appear during the coming year, the labels as heretofore having a reprint of the original description of the species.